Load Rating Summary Explanation Sheet

Nebraska Department of Roads - Bridge Division

Load Rating Summary Sheet

(1) State Bridge Number _____
(2) County Bridge Number _____
(3) Structure Type _____
(4) Highway System _____

(5) Analyst _____
(6) Analysis Date _____
(7) Year Built _____
(8) Year Reconstructed _____
(9) Design Load _____

(10) **NBI Rating Factor Summary (HS or HL93):**
(11) Inventory Capacity _____ (12) Operating Capacity _____

(13) **Legal Truck Summary:**
Type 3 (Tons) _____ Type 3S2 (Tons) _____ Type 3-3 (Tons) _____

(14) **Recommended Posting Summary:**
Type 3 (Tons/NA) _____ Type 3S2 (Tons/NA) _____ Type 3-3 (Tons/NA) _____
(15) Posting is required for capacities less than 25T, 37T, and 43T respectively. Gross Posting should be avoided.

(16) **Permit Load Summary:**
Type 3 (Tons) _____ Type 3S2 (Tons) _____ Type 3-3 (Tons) _____
(17) For permitting purposes only, capacity based on a single lane distribution factor with no impact.
No other vehicles are to be allowed on the bridge, crawl speeds less than 5 mph, and no gear shifting or braking, are to be strictly observed

(18) Rating Method: ☐ ASR ☐ LFR ☐ LRFR ☐ Other

(19) Rating Information Provided: ☐ Plans ☐ Field Measurements ☐ Testing ☐ No Information Exists

(20) Depth & Type of Overlay: _____ in. ☐ Concrete ☐ Gravel ☐ Asphalt ☐ Other

(21) **Condition Rating:**
Deck: _____ Superstructure: _____ Substructure: _____ Pile: _____ Scour: _____

(22) **Load Rating Evaluation Summary:** I = Investigated C = Controls (HS or HL93)

I	C		I	C	
☐	☐	+ M of Interior Girder / Beam	☐	☐	Truss Members
☐	☐	+ M of Exterior Girder / Beam	☐	☐	Floor Beams
☐	☐	- M of Interior Girder / Beam	☐	☐	Stringers
☐	☐	- M of Exterior Girder / Beam	☐	☐	Pins
☐	☐	Shear At/Near Reactions	☐	☐	Hangers
☐	☐	Deck Overhang	☐	☐	Substructure Elements
☐	☐	Deck Between Girders	☐	☐	Sidewalks/Medians w/o Traffic Barriers
☐	☐	Fatigue Prone Details	☐	☐	Scour

Additional Comments (Include any section loss, location of section loss, assumptions, and hand calculation references used in this analysis)

(23)

(24)

(Seal & Date)

The recommended Rating and Posting for this structure are based on a theoretical analysis of the structural elements involved, and on a limited amount of information concerning their condition. These weight limits are intended only as a general guideline and may be varied accordingly by the officials responsible for this structure after an investigation of the structural condition, reaction to vehicular loads and any other items where judgement is required to establish a proper weight limit. (25)

DR Form 464, Jan 07

Changes to Any Items Marked with this Symbol May Require Re-Load Rating of the Bridge. Please Contact NDOR Bridge Office.

1. A Unique Number Assigned to the Bridge by the State

2. A Unique Number Assigned to the Bridge by the County (this may be the same as the State bridge number)

3. Description of the Kind of Material and Design Used in the Construction of the Main Span of the Bridge

4. Indicates if the Bridge is Part of the National Highway System (NHS) or Not (Non-NHS)

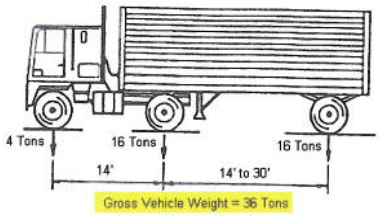
5. Initials of the Engineer Who Performed the Load Rating

6. The Date the Bridge was Last Load Rated. If Items Marked with a Symbol Have Changed After this Date, Re-Load Rating the Bridge May Be Required.

7. The Date the Bridge was Originally Built. 1935 is Used for All Bridges Where the Year Built is Unknown.

8. Signifies that Significant Work Has Been Done to the Bridge Beyond What is Considered Routine Maintenance Activity.

9. The Truck Load and Axel Configuration the Bridge was Originally Design To Carry, Expressed in Terms of a Standard HS Truck



Type HS - 20 Truck

Ex. A HS-15 Truck Has 15/20 = 75% of the Axel Loads of a HS-20 Truck
Ex. A HS-25 Truck Has 25/20 = 125% of the Axel Loads of a HS-20 Truck

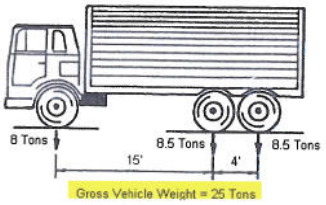
10. **Rating Factor = Bridge Capacity / HS-20 Truck Demand**

Ex. R.F. = 0.75 means the bridge can carry 0.75 x 36 Tons = 27 Tons (0.75 x HS-20 = HS-15)
Ex. R.F. = 1.50 means the bridge can carry 1.50 x 36 Tons = 54 Tons (1.50 x HS-20 = HS-30)

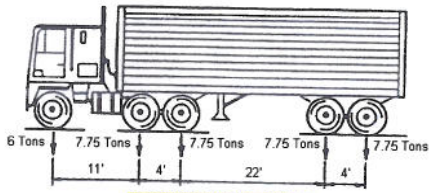
11. The Maximum HS Truck Load that Can Routinely Cross the Bridge Without Causing Permanent Damage, Expressed in Terms of a Rating Factor

12. The Maximum HS Truck Load that Should Ever Be Allowed to Cross the Bridge, Expressed in Terms of a Rating Factor.

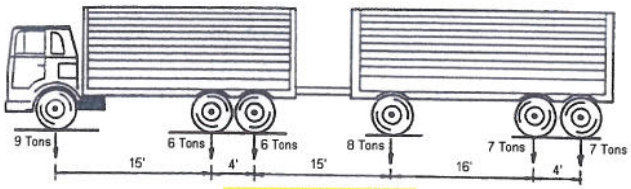
13. The Maximum Legal Truck Loads that Should Ever Cross the Bridge Without Invoking the Restrictions of Item 17, Expressed In Tons.



Type 3 Legal Truck

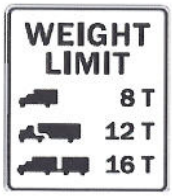


Type 3S2 Legal Truck



Type 3-3 Legal Truck

14. The Absolute Maximum Values that Should Be Placed on the Posting Signs Located at Each End of the Bridge. A Value of NA Indicates that Posting is Not Required for that Specific Truck Configuration. Posting According to Each Applicable Legal Truck is Encouraged. Gross Posting Will Limit the Use of Your Structure Unnecessarily. However, if Gross Posting is Chosen the Minimum of the Three Legal Trucks Must Be Used.



MUTCD Sign No. R12-5

15. According to Nebraska State Law, Posting is Required When the Bridge Capacity Drops Below the Following Limits:

25 Tons for **Type 3** Legal Trucks
37 Tons for **Type 3S2** Legal Trucks
43 Tons for **Type 3-3** Legal Trucks

Changes to Any Items Marked with this Symbol May Require Re-Load Rating of the Bridge. Please Contact NDOR Bridge Office.

16 Under Certain Imposed Driving Conditions, Truck Loads that Exceed the Posted Limitations May Be Allowed to Cross the Bridge. This Load Level is Only Applicable to Trucks Meeting One of the Three Legal Truck Axel Configurations and with the Limitations Mentioned Below. No Loads in Excess of 25 tons, 37 tons, or 43 tons for Type 3, 3S2, and 3-3 Trucks respectively, Shall be Allowed to Cross Any Bridge Regardless of the Limits Specified in Item 16 Without a Special Analysis. Allowing this Load to Routinely Cross the Bridge May Shorten the Life of the Bridge and Should Be Avoided. A Special Analysis Shall Be Required for All Trucks that do Not Conform to the Axel Configurations of the Three Legal Trucks as Shown in the Explanation of Item 13.

17 Imposed Driving Conditions for Permit Load Bridge Crossings. Permit Loads are Defined as Truck Loads that Exceed Posted or Legal Load Limits. Access of these Truck Loads to the Bridge is at the Discretion of the Bridge Owner.

18 The Structural Methodology Used to Rate the Bridge:

ASR = Allowable Stress Rating Method
No longer a recognized methodology for reporting to the National Bridge Inspection Standards (NBIS)

LFR = Load Factor Rating Method
The current preferred method of reporting to the NBIS

LRFR = Load and Resistance Factor Rating Method
The "future" of load rating; yet to be met with widespread implementation

19 Indicates the Source and Consequential Reliability of the Information Used to Perform the Load Rating

20 Indicates the Depth and Type of Driving Surface that has Been Added to the Bridge, when Applicable. Regular Maintenance Activities to Remove Excess Gravel/Dirt is Strongly Recommended. Any Changes to this Information May Warrant the Re-Load Rating of the Bridge.

21 Indicates the Condition Codes of the Primary Bridge Elements at the Time the Bridge was Rated. Any Changes to this Information May Warrant the Re-Load Rating of the Bridge. If Condition Codes Fall Below the Following, Re-Load Rating of the Bridge is **Required**.

Deck < 5
Superstructure < 5
Substructure < 5
Pile < 5
Scour < 3

22 Record of what Bridge Elements were "Investigated" During the Performance of the Load Rating. The Element that was Found to Have the Lowest Rating "Controls" the Overall Rating of the Bridge. If Any Item(s) of Concern to You Have Not Been Investigated, Contact NDOR Bridge Division.

23 Documentation of Any Assumptions that Were Made During the Load Rating or Comments that Support the Final Load Rating of the Bridge

24 Stamp of the Professional Engineer that Performed/ Reviewed the Final Load Rating, Signed and Dated. All Load Ratings Must Be Stamped to be Considered Federally Compliant.

25 A Reminder to the Official Responsible for the Bridge that this Load Rating is Not Meant to Replace Sound Judgment or Common Sense. You Know Your Bridges Better Than Anyone. If the Load Rating is Higher than You Feel Comfortable With, Do Not Hesitate to Establish Your Own Reduced Load Limit. If You Have Additional Concerns or Information that Has Not Been Addressed in the Load Rating, Contact NDOR Bridge Division Immediately.